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AMSAT NEWS SERVICE
ANS-330

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org

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SB SAT @ AMSAT $ANS-330.01
ANS-330 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 330.01
>From AMSAT HQ SILVER SPRING, MD.
November 25, 2012
To All RADIO AMATEURS
BID: $ANS-330.01

Fox-1 CubeSat Design Published in Proceedings and Web

During the 2012 Symposium AMSAT Vice-President Engineering, Tony Monteiro, AA2TX and the Fox Engineering team presented the latest status on the design, development, and construction of the Fox-1A satellite project. This is the 1U cubesat which is slated as the FM repeater transponder to replace AO-51.

The Proceedings of the AMSAT-NA 30th Symposium and AMSAT-NA Annual Meeting, October 26-28 in Orlando, Florida have been put in the on-line AMSAT Store. Please visit the store at:
http://store.amsat.org/catalog/

The proceedings contains over 30 articles on subjects ranging from current satellite operations to detailed updates on the Fox Project.

AMSAT's Fox web page at http://www.amsat.org/amsat-new/fox/ now has been refreshed with the latest information from the Symposium:

+ Fox-1 Mechanical design and component integration diagrams

+ Fox-1 Thermal Design

+ Fox-1 Radiation Environment

+ Preliminary screenshot view of Fox-1 Telemetry Program

Fox-1A's design goals include:

+ Fox-1 is designed to operate in sunlight without batteries once the battery system fails. This applies lessons learned from AO-51 and ARISSat-1 operations.

+ In case of IHU computer failure Fox-1 will continue to operate its FM repeater in a basic, 'zombie sat' mode, so that the repeater remains on-the-air.

+ Fox-1 is designed as the immediate replacement for AO-51. Its U/V (Mode B) transponder will make it even easier to work with modest equipment.

+ From the ground user's perspective, the same FM amateur radio equipment used for AO-51 may be used for Fox-1.

AMSAT's Fox-1 project timeline is based on targeting a launch in the second half of 2013. NASA will determine on which flight each of the Project ELaNa CubeSats fly.

Watch for news in the AMSAT Journal for details of AMSAT's partnership with universities, the National Science Foundation, and NASA in seeking grants for getting the first and future Fox generation satellites into orbit.

[ANS thanks the Fox Team for the above information]

2012 AMSAT Symposium Proceedings Available in the AMSAT Store

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The proceedings contains over 30 articles on subjects ranging from current satellite operations to updates on the Fox Project.

If you could not make the meeting, this is a great source of the latest information.

Price is $25 + $12 Shipping for USA. See the details on the store web page and order your copy today!

[ANS thanks Martha at the AMSAT Office for the above information]

PhoneSat CubeSat to Launch from Wallops in December

The PhoneSat cubesat is planned for launch aboard a new commercial rocket from Orbital Sciences Corp. Orbital's initial flight of the Antares-110 vehicle will carry PhoneSat into low earth orbit around

December 17. The vehicle will be launched from a new launch pad LA-0A at Wallops Island, where the former Conestoga launch pad was located.

Phonesat carries an amateur radio payload on 437.425 MHz, has been chosen as one of the winners in the Aerospace category for the Popular Science magazine "Best of What's New 2012" awards.

PhoneSat is a technology demonstration mission consisting of three 1U CubeSats intended to prove that a smartphone can be used to perform many of the functions required of a spacecraft bus.

The satellite is built around the Nexus smartphone which will be running the Android operating system and will be enclosed in a standard 1U cubesat structure. The main function of the phone is to act as the Onboard Computer, but the mission will also utilize the phone's SD card for data storage, 5MP camera for Earth Observation, and 3-axis accelerometer and 3-axis magnetometer for attitude determination.

One of the nanosatellites, powered by the HTC Nexus One smartphone, will send back pictures of Earth. The other two, running on the Samsung Nexus S, will have two-way S-band radio allowing them to be controlled from Earth.

With a short lifetime of only about one week, the satellites have no solar cells and operate on battery only.

More information about the Antares vehcicle can be found at:
http://www.orbital.com/Antares/

A video of the Popular Science award for PhoneSat in the "Best of What's New 2012" awards can be viewed at:
http://tinyurl.com/PhoneSatNews (YouTube)

NASA Ames web page of the PhoneSat project can be found at:
http://tinyurl.com/PhoneSat-NASA (nasa.gov)

AMSAT-UK posted news of PhoneSat at:
http://www.uk.amsat.org/?p=11544

[ANS thanks NASA, Gunter's Space Page, and AMSAT-UK for the above information]

N0D Special Event Station Celebrating The End of the World

That's right, the end is finally near. According to one of the three Mayan Calendars, the End of the world will occur on Dec 21, 2012. To celebrate this literally once in a lifetime event, Special Event Station N0D (Now Zero Days) will be activated for three days during and after(?) the end of the world. December 20 is a celebration of the end of the world. December 21, the day of destruction, we will be on the air as long as possible. December 22nd, that is a little iffy right now.

N0D will be activated on the satellites by Allen Mattis, N5AFV, on December 20, 2012, on December 21, 2012 unless the day of destruction makes that impossible, and on December 22, 2012 if the world survives.

More information is available on the Official N0D website:
http://www.nowzerodays.com

You can also e-mail the N0D team at N0D.Doomsday@gmail.com

Amateur radio stations around the crumbling globe are invited to contact N0D, who will be operating from a secret undisclosed location. QSL with SASE to the address in QRZ. If Doomsday actually does happen,

we regret that a QSL will not be possible so hold on to your SASE until the 22nd at least. Check out the website for a preview of the N0D QSL card.

You can celebrate Doomsday by contacting N0D directly on the air. Amateurs can also become an official Doomsday station by registering on the website. You will be given a registration number and the authority to identify yourself as "Official Doomsday Station" followed by your Doomsday number.

Official N0D Doomsday apparel will be available soon; T-shirts, Caps and buttons.

Official Doomsday stations will receive the Doomsday Station Certificate. Stations contacting at least 10 Official Doomsday Stations during the event will be recognized on the web site.

It is not entirely clear exactly how it will happen. Will it be a cataclysmic shift in the earth's magnetic field, Global Warming on steroids, earthquakes, volcanoes floods, global thermonuclear war, Meteor collision, the 10 plagues of Egypt, UFO invasion. who knows? There are scientists, soothsayers and philosophers on both sides of the question. Either way it will be an event worth remembering ... or maybe there will be no one left to remember it?

Check the website for the latest updates: http://www.nowzerodays.com

[ANS thanks Allen Mattis, N5AFV for the above information]

Successful ARISS School Contacts This Week

Italy

An Amateur Radio on the International Space Station (ARISS) contact was held with Liceo scientifico Giacinto De Sivo - Fondazione Villaggio dei Ragazzi in Maddaloni, Italy on Tuesday, November 20. Amateur Radio station IK1SLD in Italy provided the radio link. The contact is incorporated into lessons focused on the developments in astronomy from a scientific, philosophical, and literary point of view.

India

An Amateur Radio on the International Space Station (ARISS) contact was held between Sunita Williams, KD5PLB on the ISS and students visiting the GujaratScience City (GSC) in Ahmedabad, Gujarat, India on Wednesday, November 14 via telebridge station IK1SLD in Italy.

The children got in 15 questions about daily life on the ISS before losing the radio connection. GSC has high-tech exhibitions covering space exploration and communications; the contact was part of a special outreach program of the GSC, organized to provide students with hands-on activities related to the ISS. The displays and activities provide children with the motivation and inspiration for a career and future in space science and research. The Times of India covered

the event. See:
http://timesofindia.indiatimes.com/city/ahmedabad/Excited-kids-go-on-space-talk-with-Sunita/articleshow/17250710.cms

Video of this event can be viewed on-line at:
http://tinyurl.com/ARISS-Contact-India (Southgate)

Florida

On November 16, Florida's Flagler Palm Coast Amateur Radio Club (FPCARC) connected with Astronaut Sunita Williams, KD5PLB via an Amateur Radio on the International Space Station (ARISS) contact. Indian Trails Middle School hosted the event, but students from other area schools also participated.

Former NASA astronaut Winston Scott gave a presentation to the students. All schools in the district were able to participate in the event through live internet streaming. Media representatives were present and articles have been posted.

FlaglerLive.com has a story:
http://flaglerlive.com/46845/ham-radio-iss/

For the Palm Coast Observer article, see:
http://www.palmcoastobserver.com/news/palm-coast/Neighborhood/11172012
5718/
Students-get-visit-from-astronaut-talk-to-space-st

Indiana

Cumberland Elementary School participated in an ARISS contact on October 30. Students had the opportunity to question Indiana native Kevin

Ford, KF5GPP about ISS life. The contact video is now available. See:
http://cumberland-iss.weebly.com

[ANS thanks Carol Jackson, KB3LKI and the 2012-11-19 ARISS Status Report for the above information]

Three Astronaut Hams Return Safely From ISS

Expedition 33 Commander Sunita Williams, KD5PLB of NASA and Flight Engineers Akihiko Hoshide, KE5DNI of Japan Aerospace Exploration Agency and Yuri Malenchenko, RK3DUP of Roscosmos rode their Soyuz TMA-05M spacecraft to a safe landingin a remote area near the town of Arkalyk, Kazakhstan on November. 19, 2012. Williams, Hoshide and Malenchenko returned from four months onboard the International Space Station.

NASA ISS Ham Radio Project Engineer Kenneth Ransom, N5VHO summarized Amateur Radio on the International Space Station (ARISS) successes for Williams, Malenchenko and Hashide noting 39 contacts with schools. Of these contacts 14 were via telebridge, while 25 took place directly between the school and the ISS via Amateur Radio.

During Expedition 32 Sunita added 22 to her previous record of 33 school events which puts her on top for the most career schools talked to from orbit. Malenchenko made two contacts, one with the Ukraine and another with Russia, while Hashide completed 15, including four with his native Japan, as well as with the US, Germany, Australia,

Poland and Italy.

Photos and additional news of the Soyuz landing are on-line at:
http://spaceref.com/news/viewsr.html?pid=42645
http://spaceref.com/news/viewsr.html?pid=42643
http://tinyurl.com/NovSoyuzLanding (Space-Travel.com)

Expedition 34 is crewed by NASA astronaut Kevin Ford, KF5GPP, and Russian cosmonauts Evgeny Tarelkin and Oleg Novitskiy.

Sunita Williams recorded an extensive tour of the orbital laboratory including scenes of each of the station's modules and research facilities with a running narrative of the work that has taken place and which is ongoing aboard the orbital outpost.

Get your ISS tour at: http://tinyurl.com/ISS-Guided-Tour (YouTube)

[ANS thanks, ARISS, ARRL, SpaceRef.com and Space-Travel.com for the above information]

Call for Papers for IAA Conference: University Satellite Missions

The 2nd IAA Conference on University Satellites Missions and Cubesat Winter Workshop will be held in Rome, Italy from February 3-9, 2013 under the main sponsorship of IAA, GAUSS Srl, ESA, ASI, Italian Air Force, Sapienza University of Roma, Morehead State University (Kentucky), Von Karman Institute, FILAS, BCC Roma.

The Conference has the goal to provide the international space community with a forum for presentations and discussions in the area of University Satellites. Particular emphasis will be given to the theme, "Innovative aspects related to science and engineering for university satellites". Three days will be completely dedicated to the Cubesat community.

Some of the proposed topics are:

Space Environment, Remote sensing and Earth observation, Innovative solutions for university satellite subsystems, Launch opportunities, Space Debris, Ground Segment and Stations Network, New Perspectives for Cubesats, Cubesats Future Payloads and Experiments, Satellite Orbit and Attitude Determination and Control, Micro-propulsion Subsystems, University Platform for biomedical research in Space, Formation Flying, Cubesat In-Orbit Experience, Cubesats Scientific Missions and applications" activities.

The preliminary program, logistics, and registration information, exhibition stand information may be found on the symposium website at http://www.gaussteam.com in the events section.

Abstract Submission Deadline: December 17, 2012
Acceptance Notification*: December 22, 2012
Paper Submission Deadline*: January 25, 2013

[ANS thanks Filippo Graziani, G.A.U.S.S. President and IAA member, Conference Chair for the above information]

Satellite Shorts From All Over

+ Video of ARISS contact from the National Scouting Museum Jamboree on the Air (JOTA) event in Irving, Texas on October 20 with Sunita Williams, KD5PLB on the ISS can be viewed at: http://vimeo.com/53281390

+ NASA's Pete Worden presentation at the Canadian Space Summit on the topic of Small Satellites for Science and Other Uses and as an example: Earth Observation, promises and challenges has been posted by SpaceRef.com at: http://tinyurl.com/SpaceRefSmallSatellites

+ Andy Foad, G0FTD has made a collection of RF calculations available in a spreadsheet. This can be downloaded from: https://sites.google.com/site/g0ftdradio/home/rf-spreadsheets

+ How about the concept of private/commercial CubeSat missions to Mars? See the exploremars.org posting at: http://tinyurl.com/CubeSatsToMars

+ The Van Allen Probes Mission, part of NASA's Living With a Star program, studies the physical dynamics of Earth's radiation belts and space weather. A video of this mission, including classroom activities about space weather is posted by Johns Hopkins University Applied Physics Laboratory: http://vanallenprobes.jhuapl.edu/ (Bill, W3XO)

[ANS thanks everyone for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information. And with that, please keep in mind the ham who's son pestered his parents for a trip to the zoo. Finally his mother talked his reluctant father into taking him. "So how was it?" his mother asked when they returned home. "Great," the son replied. "Did you and your father have a good time?" asked his mother. "Yeah, Daddy really liked it," exclaimed the son excitedly, "especially when one of the animals came home at 30 to 1!"

73,
This week's ANS Editor,
JoAnne Maenpaa, K9JKM